

electrodes for applying an electric field across at least some of said liquid crystal material;

a surface alignment on the inner surface of at least said first cell wall providing an alignment to the liquid crystal molecules;

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wherein said surface alignment comprises an array of posts which have at least one of a shape and an orientation to induce a liquid crystal director adjacent said posts to adopt two different tilt angles in substantially the same azimuthal direction;

the arrangement being such that two stable liquid crystal molecular configurations can exist after suitable electrical signals have been applied to said electrodes.

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2. (Amended) A device as claimed in claim 1, wherein said liquid crystal material has negative dielectric anisotropy and wherein said second cell wall has a surface alignment which induces a local homeotropic alignment of said liquid crystal director.

3. (Cancelled) /

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4. (Twice Amended) A device as claimed in claim 1, wherein said posts have a height in the range of about 0.5 to 5 μm .

5. (Twice Amended) A device as claimed in claim 1, wherein said posts have a height in the range of about 0.9 to 1.3 μm and the spacing between the cell walls is about 3 μm .

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6. (Amended) A device as claimed in claim 1, wherein at least part of a side wall of said posts is tilted at a tilt angle with respect to the normal to the plane of said first cell wall.

b5 7. (Twice Amended) A device as claimed in claim 6, wherein said tilt angle is in the range of about 5 to 7°.

b6 8. (Amended) A device as claimed in claim 6, wherein said tilt angle is about 5°.

b7 9. (Twice Amended) A device as claimed in claim 1, wherein said posts each have a width in the range of about 0.2 to 3 μm .

10. (Twice Amended) A device as claimed in claim 1, wherein said posts are arranged in one of a random or pseudorandom array.

11. (Twice Amended) A device as claimed in claim 1, wherein said posts are spaced in the range of about from 0.1 to 5 μm apart from each other.

b8 12. (Amended) A device as claimed in claim 1, wherein said liquid crystal material contains a surfactant.

b9 13. (Twice Amended) A device as claimed in claim 1, wherein said posts are formed from at least one of a photoresist or a plastics material.

b10 15. (Twice Amended) A device as claimed in claim 1, wherein said posts each have a surface comprising a material which is in contact with said liquid crystal material, excluding any material which induces homeotropic alignment in liquid crystal materials.

16. (Twice Amended) A device as claimed in claim 1, wherein said second wall has a surface alignment comprising an array of features which have at least one of a shape and an orientation to induce a liquid crystal director adjacent the features to adopt two different tilt angles in substantially the same azimuthal direction.

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17. (Amended) A device as claimed in claim 1, wherein said liquid crystal material has a pleochroic dye dissolved therein.

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18. (Twice Amended) A device as claimed in claim 1, wherein said at least one of the shape and the orientation of said posts is such as to favour only one azimuthal director orientation adjacent said posts, and this orientation is the same for each post.

19. (Twice Amended) A device as claimed in claim 1, wherein said at least one of the shape and the orientation of said posts is such as to favour only one azimuthal director orientation adjacent said posts, and this orientation varies from post to post so as to give a scattering effect in one of the two stable liquid crystal molecular configurations.

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20. (Amended) A device as claimed in claim 1, wherein an inner surface of said second cell wall is provided with an alignment which induces a local liquid crystal director to adopt a planar alignment in substantially the same azimuthal direction induced by the alignment on the surface of the first cell wall.

21. (Amended) A device as claimed in claim 1, wherein said liquid crystal director twists between said first cell wall and said second cell wall.

22. (Amended) A device as claimed in claim 21, wherein said twist is induced by chiral doping of said liquid crystal material.

23. (Twice Amended) A device as claimed in claim 21, wherein said twist is induced by treatment of said second cell wall to produce one of a planar or a tilted planar alignment of a local liquid crystal director at a non-zero angle to the azimuthal direction induced by said posts on said first cell wall.

b14 24. (Amended) A device as claimed in claim 1, wherein said posts are formed from a material, excluding any material which induces homeotropic alignment in liquid crystal materials.

Please add the following claims:

b15 25. (New) A device as claimed in claim 6, wherein said posts are cylindrical.

26. (New) A device as claimed in claim 6, wherein said posts have a square cross section.

27. (New) A device as claimed in claim 1, wherein said posts have a cross section selected from an oval shape and a diamond shape.

28. (New) A bistable nematic liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of nematic liquid crystal material;

electrodes for applying an electric field across at least some of said liquid crystal material;

a first surface alignment on the inner surface of said first cell wall and a second surface alignment on the inner surface of said second cell wall providing alignment to the liquid crystal molecules;

wherein said first surface alignment comprises an array of posts which have at least one of a shape and an orientation to induce a liquid crystal director adjacent said posts to adopt two different tilt angles in substantially the same azimuthal direction;

said posts each having a surface comprising a material which is in contact with said liquid crystal material, excluding a material which induces homeotropic alignment in liquid crystal materials;

the arrangement being such that two stable liquid crystal molecular configurations can exist after suitable electrical signals have been applied to said electrodes.

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cont.
29. (New) A bistable nematic liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of nematic liquid crystal material;

electrodes for applying an electric field across at least some of said liquid crystal material;

a first surface alignment on the inner surface of said first cell wall and a second surface alignment on the inner surface of said second cell wall providing alignment to the liquid crystal molecules;

wherein said first surface alignment comprises an array of posts which have at least one of a shape and an orientation to induce a liquid crystal director adjacent said posts to adopt two different tilt angles in substantially the same azimuthal direction;

said posts each having a surface comprising a material which is in contact with said liquid crystal material, excluding a material which induces homeotropic alignment in liquid crystal materials;

said second surface alignment inducing a local homeotropic alignment of a liquid crystal director;

the arrangement being such that two stable liquid crystal molecular configurations can exist after suitable electrical signals have been applied to said electrodes.

REMARKS

Claims 1 to 29 are pending in the present application. A marked-up version of the claims is set forth in the attachment entitled "Marked-Up Version of the Claims."